CLIMATE ANALYSIS CENTER

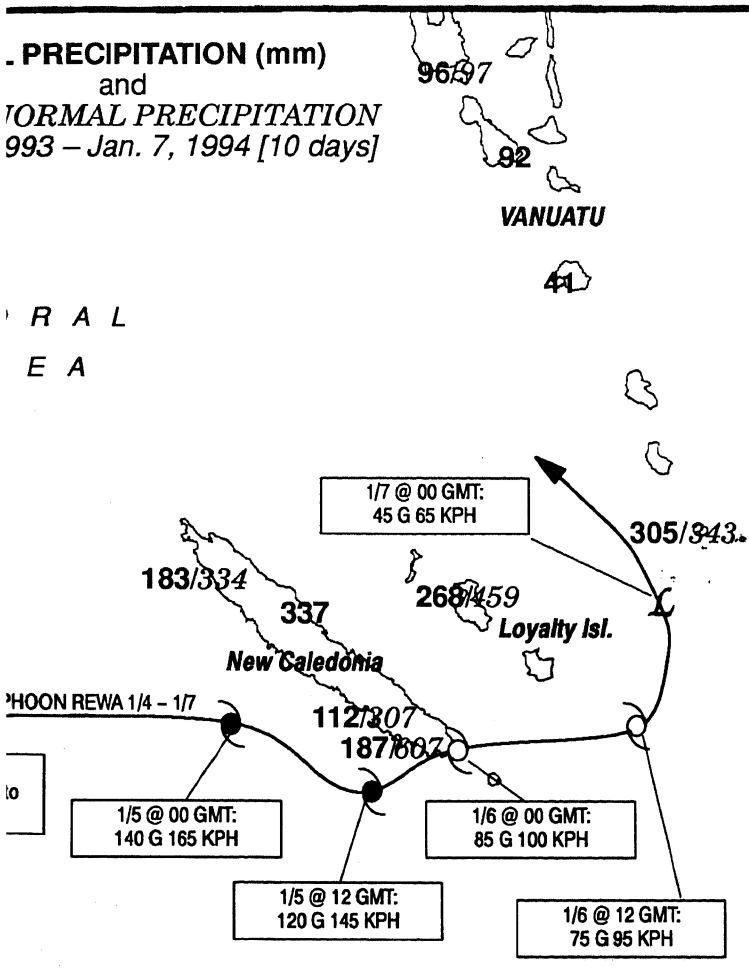
CONTAINS:

ENSO ADVISORY #94/01

KLY CLIMATE BULLETIN

Washington, DC **January 12, 1994**

. PRECIPITATION (mm)
and
'ORMAL PRECIPITATION
993 – Jan. 7, 1994 [10 days]



'SIS CENTER, NOAA

TYPHOON REWA AGGRAVATES WETNESS ACROSS NEW CALEDONIA. *During the 10–day period ending Jan. 7, between three and six times the normal rainfall was reported across New Caledonia and the Loyalty Islands. Much of this precipitation fell in association with slowly–weakening Typhoon Rewa, which tracked through the island group during Jan. 5 – 7. Winds gusting up to 145 kph and daily rainfall totals reaching 117 mm accompanied the tropical cyclone. Farther south, up to 400 mm of rain may have fallen on parts of the New Zealand highlands (not shown), according to press reports, pushing the Chutla River southwest of Christchurch to its highest level in 116 years. In stark contrast, hot and dry conditions abetted more than a hundred wildfires burning in the vicinity of Sydney, Australia. According to press reports, about 1.5 million hectares of forest were scorched and over 200 buildings were destroyed by the fires.*

20S

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE–NATIONAL METEOROLOGICAL CENTER
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- Global two–week temperature anomalies.
- Global four–week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three–month precipitation anomalies (once a month).
- Global three–month temperature anomalies (once a month).
- Global twelve–month precipitation anomalies (every three months).
- Global twelve–month temperature anomalies (every three months).
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Climate Analysis Center via the Global Telecommunications System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF JANUARY 8, 1994

t–Central North America:

WINTRY WEATHER CONTINUES.

:ratures averaged as much as 12°C below normal in Canada and 9°C normal in the United States [COLD – 3 weeks]. Up to 100 mm of itation fell on the region, and six–week moisture surpluses climbed mm at some locations in New England [WET – 6 weeks]. According s reports, snow and ice closed airports, snarled highway traffic, and :ed power across much of the northeastern United States [Episodic].

:–Central South America:

MORE WET WEATHER.

)0 mm of rain deluged parts of Uruguay and Argentina, but totals elow 20 mm in extreme southern Brazil. Since early December, re excesses approached 180 mm at some locations [WET – 12 .

)pe:

STORMS CONTINUE TO POUND REGION.

tation amounts ranged from 40 to 100 mm across most of central : while Scandinavia and much of southern and eastern Europe re- less than 20 mm. Very heavy precipitation (100 to 200 mm) fell on estern sections of the Iberian Peninsula and in parts of the Alps, al- six–week moisture surpluses to approach 380 mm in Switzerland – 6 weeks]. According to press reports, flooding afflicted southern and northern Spain while snow and freezing rain snarled traffic in f Germany [Episodic Events].

n:

WET SPELL ENDS.

r no precipitation fell on the region, allowing moisture surpluses to [WET – Ended at 11 weeks].

5. Taiwan:

LONG–TERM DRYNESS EASES.

Generally 20 to 40 mm of rain was measured across the island, and six–week moisture shortages remained below 50 mm at most locations as the region moved into a typically drier time of year. Longer term moisture shortages, however, resulted in water rationing, according to press reports [DRY – Ended at 30 weeks].

6. Southeastern Asia:

SOMEWHAT DRIER CONDITIONS REPORTED.

Up to 330 mm of rain fell on some locations in the Philippines as a tropical depression tracked near the archipelago, but most of the region received less than 50 mm. Six–week moisture excesses reached as high as 290 mm in Vietnam and soared to 910 mm in parts of the Philippines [WET – 7 weeks].

7. South–Central Australia:

ABNORMAL WETNESS PERSISTS.

Up to 60 mm of rain drenched the region, allowing totals to climb to as much as 120 mm above normal for the last six weeks [WET – 6 weeks].

8. Eastern Australia:

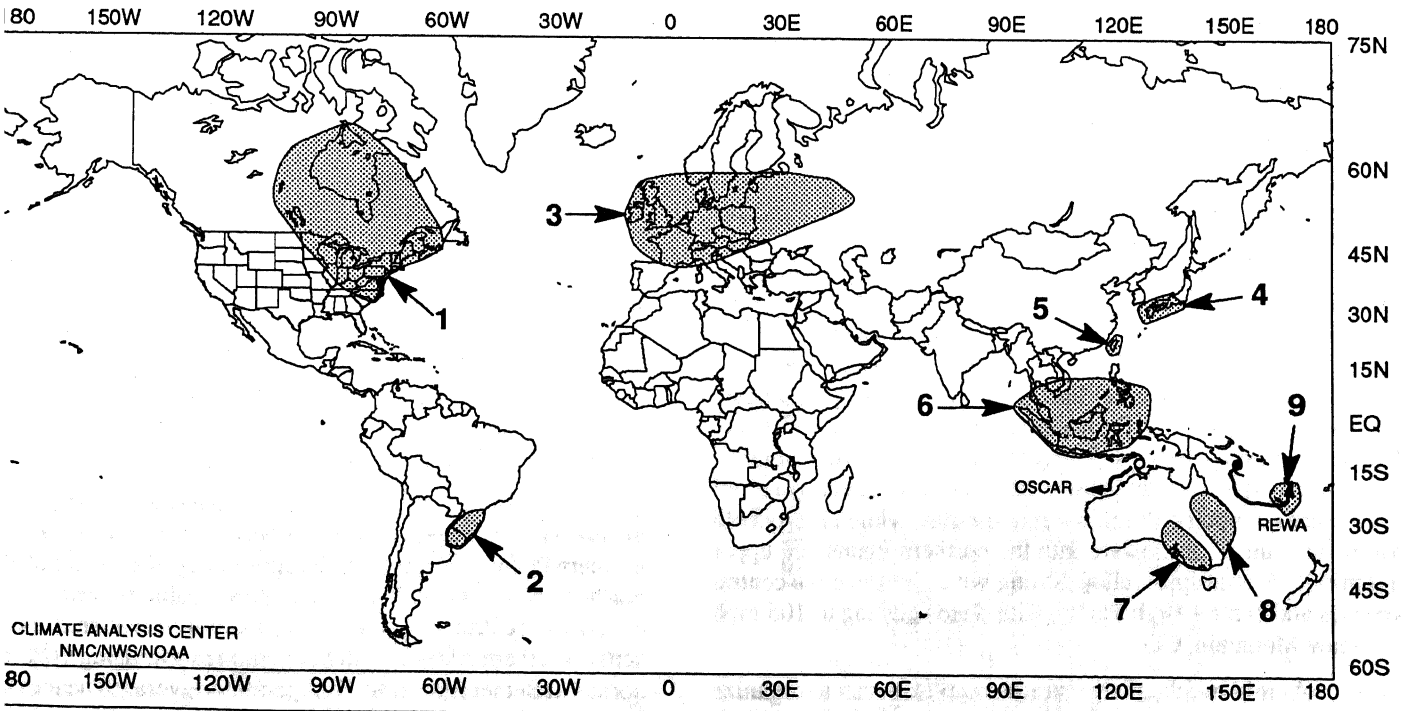
HOT AND DRY WEATHER ENGENDERS WILDFIRES.

Less than 10 mm of rain fell on the coast of eastern Australia [DRY – 4 weeks] while temperatures averaged as much as 8°C above normal during the past week [WARM – 2 weeks]. The hot and dry conditions engendered the rapid spread of wildfires, many started by arsonists, which claimed several lives, forced thousands of individuals from their homes, and destroyed hundreds of buildings near Sydney [Episodic Events].

9. Southwestern Pacific:

TROPICAL STORM RAKES REGION.

Tropical Storm Rewa buffeted New Caledonia with strong winds and up to 250 mm of rain (see front cover) [Episodic Event].



EXPLANATION

:T: Approximate duration of anomalies is in brackets. Precipitation amounts and temperature departures are this week's values.
:: Approximate locations of major anomalies and episodic events are shown. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, long–term anomalies, and other details.

UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF JANUARY 2 – 8, 1994

The year's first major winter storms battered areas from southern Appalachians to the lower Great Lakes and northern w England on Tuesday and from the Midwest to the northern middle Atlantic Coast during the latter half of the week. Tues-'s storm brought high wind, heavy snow, sleet, and freezing that delayed millions of rail commuters, closed schools and orts, and created treacherous driving conditions. Portions of region received up to two feet of snow, with Waynesburg, PA ied under 33 inches. Heavy drifts forced the closure of Inter-e 79 near Pittsburgh, PA and Interstates 40 and 77 in western rth Carolina. Heavy snow, ice, and wind downed power lines in st Virginia and on Long Island, causing widespread outages. w Jersey's coastline was pounded by heavy surf that eroded ches in Cape May and Monmouth Counties. A second winter m hit the upper Midwest on Wednesday and Thursday, accom-ied by strong winds and heavy snow. Wind chills dropped as as –60°F in North Dakota, and up to 8 inches of snow across sconsin and northern Illinois forced the closure of Chicago's orts. The storm spread more heavy snow, strong wind, freezing across the northern and middle Atlantic Seaboard before mov-out to sea at week's end. Tens of thousands of additional cus-ers were left without power as ice damaged power lines in nsylvania, Delaware, New Jersey, New York, Rhode Island, West Virginia. Farther north, another foot of snow shut down ton's Logan Airport for the second time in a week.

At the beginning of the week, a pair of frontal systems ught rain to the Florida peninsula and the middle Atlantic Coast scattered snow to the Northeast. In the central United States, tered snow fell from the central Rockies northeastward to the hern Plains and upper Great Lakes while rainshowers dotted southeastern and east-central Plains and middle Mississippi ey. Farther west, a Pacific Ocean frontal system spread rain w in the higher elevations) across the northern and central Pa-Coast and the northwestern Rockies. On Monday and Tues-a major storm system developed off the middle Atlantic Coast moved northeastward, bringing rain, sleet, and snow to the -Atlantic and heavy snow to the Appalachians and New Eng-. Meanwhile, a low pressure system spread rain from the lower rn Atlantic Coast while more snow lley to the Great Lakes and Ohio ific Ocean frontal system again ıern and central Pacific Coast to asonably warm air remained ers of states, where daily record and Tuesday, while bitterly cold to the northern Plains and upper Strong winds buffeted the central s, with winds gusting to 105 mph

to organize
stward into

the Plains. Snow fell from the northern Plains to the Great Lakes in the colder air to the northeast of the system while mild conditions prevailed south of the storm in the southern Rockies and southern Plains. Several daily high temperature records were broken in these areas. Elsewhere, snow lingered and temperatures plummeted over the Northeast in the wake of Tuesday's storm while an upper level disturbance spread more precipitation over the Northwest and northern California. During the latter part of the week, the large storm complex in the Rockies trekked eastward, dumping heavy snow from the upper and middle Mississippi Valley to the northern Atlantic Coast and spreading snow, sleet, and freezing rain from the central Appalachians to the middle Atlantic Coast and southern New England. At week's end, northwesterly flow on the west side of the storm produced lake–effect snows of up to a half a foot over parts of Michigan and Wisconsin. In the Far West, another Pacific Ocean storm system spread rain (snow in the higher elevations) across the northern and central Pacific Coast.

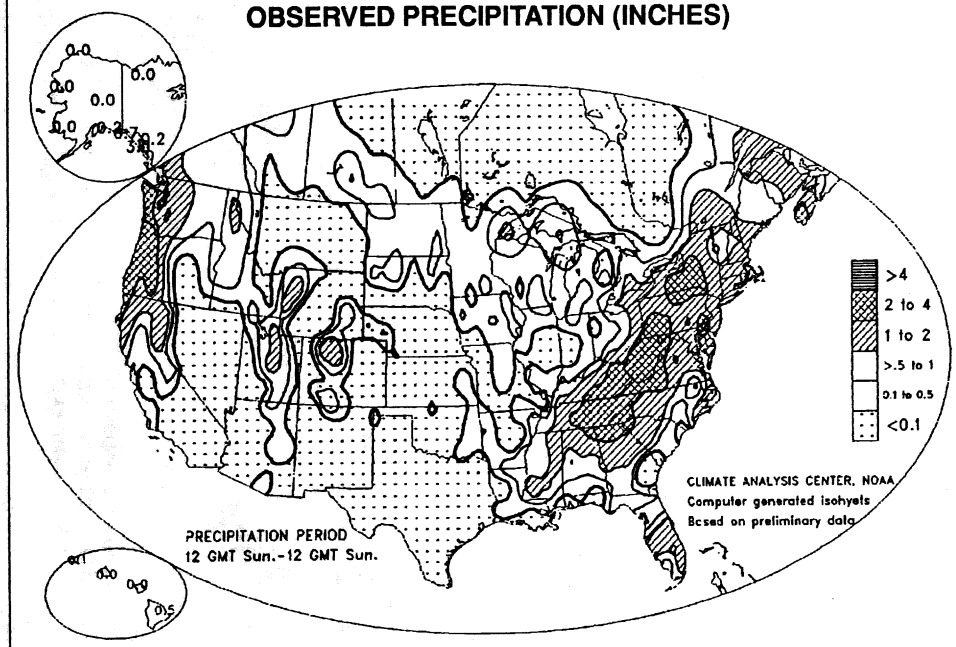
According to the River Forecast Centers, the greatest weekly precipitation totals (between two and four inches) fell on the Tennessee Valley and the southern and central Appalachians. In addition, totals exceeding two inches were reported across northern California, western Oregon, western Washington, the northern Intermountain West, the Alaskan panhandle, and the remainders of the Southeast, mid–Atlantic, and Northeast. Light to moderate amounts were measured in the northern and central Rockies, the Great Basin, the northern, east–central, and southeastern Plains, the Big Island of Hawaii, and much of the remainders of the Far West, southern Alaska, and the eastern half of the nation. Little or no precipitation was reported in southern California, the desert Southwest, the southern Rockies, and the remainders of the Great Plains, Alaska, and Hawaii.

Warmer than normal conditions dominated the Far West, the Intermountain West, the Rockies, the central High Plains, the southern Plains, and the middle and southern Atlantic Coast, with weekly departures of +8°F to +12°F observed in the northern Rockies and interior Pacific Northwest. Abnormally warm weather also prevailed over northern and southern Alaska, with weekly departures reaching +8°F at Talkeetna.

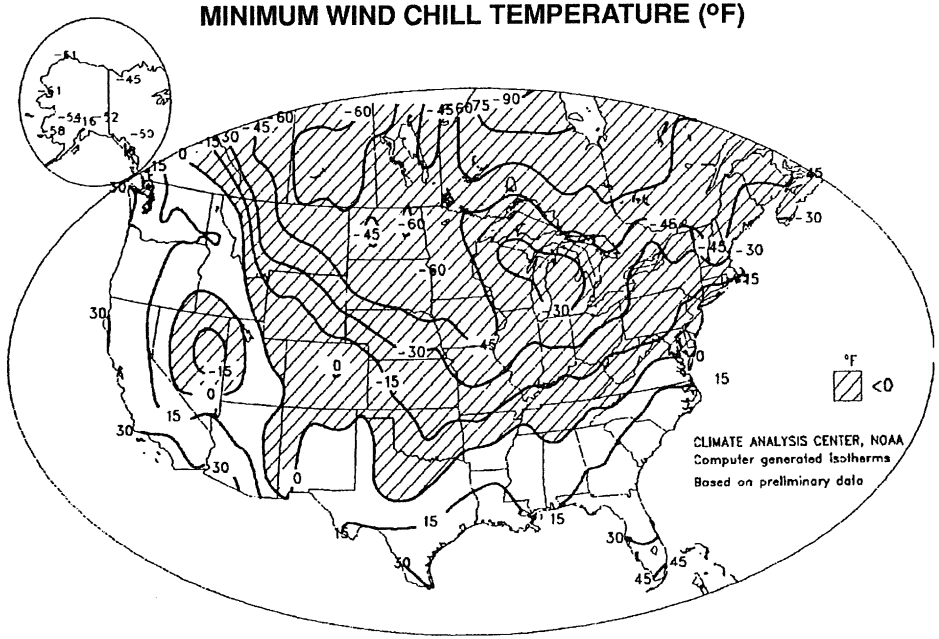
Below normal readings covered most of the remainder of the nation, with weekly departures below –8°F reported across the northern Plains, the upper Mississippi Valley, the Great Lakes, and northern New England. Below normal readings were observed over west–central and central Alaska and at scattered locations across southern Alaska, with temperatures averaging 10°F below normal at Bethel and Nome. Temperatures averaged near to slightly below normal in Hawaii.

UNITED STATES WEEKLY CLIMATE CONDITIONS *(January 2 – 8, 1994)*

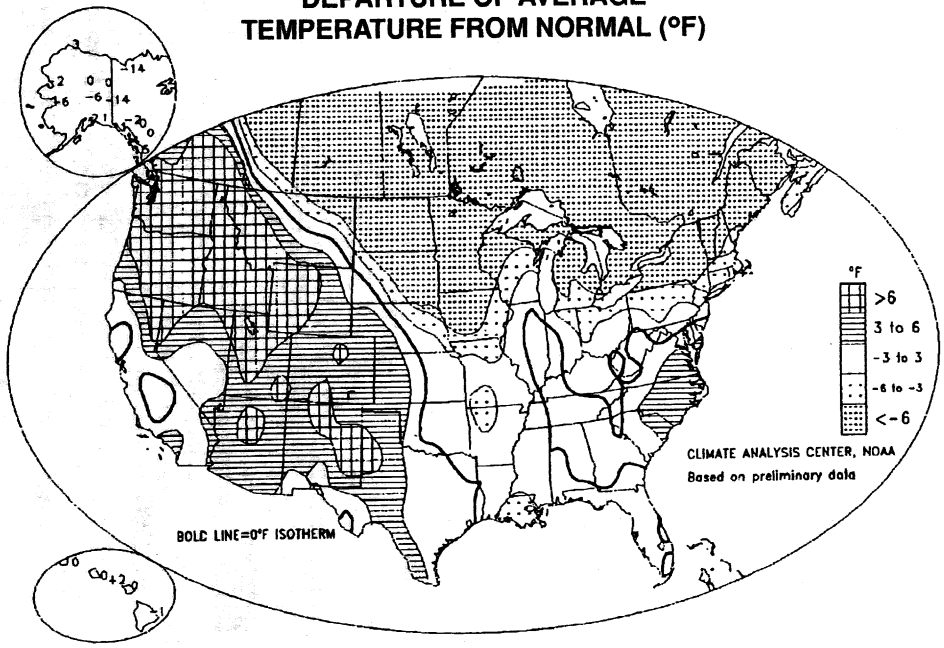
OBSERVED PRECIPITATION (INCHES)



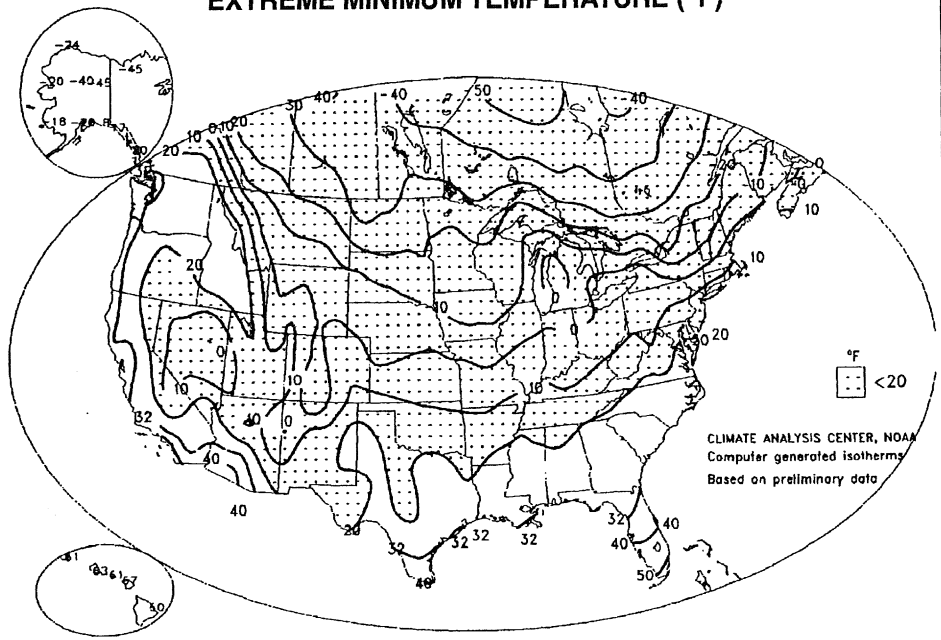
MINIMUM WIND CHILL TEMPERATURE (°F)



DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

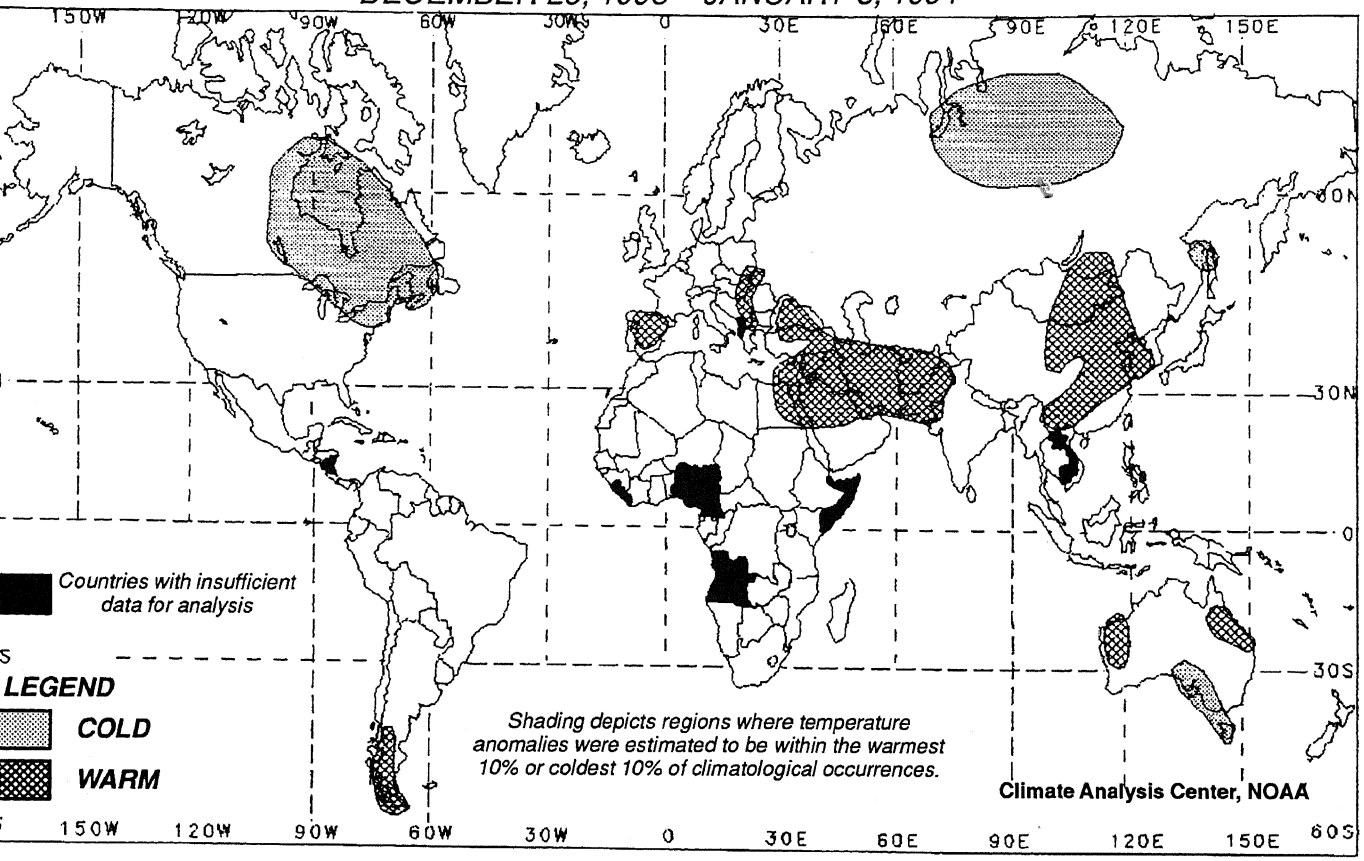


EXTREME MINIMUM TEMPERATURE (°F)



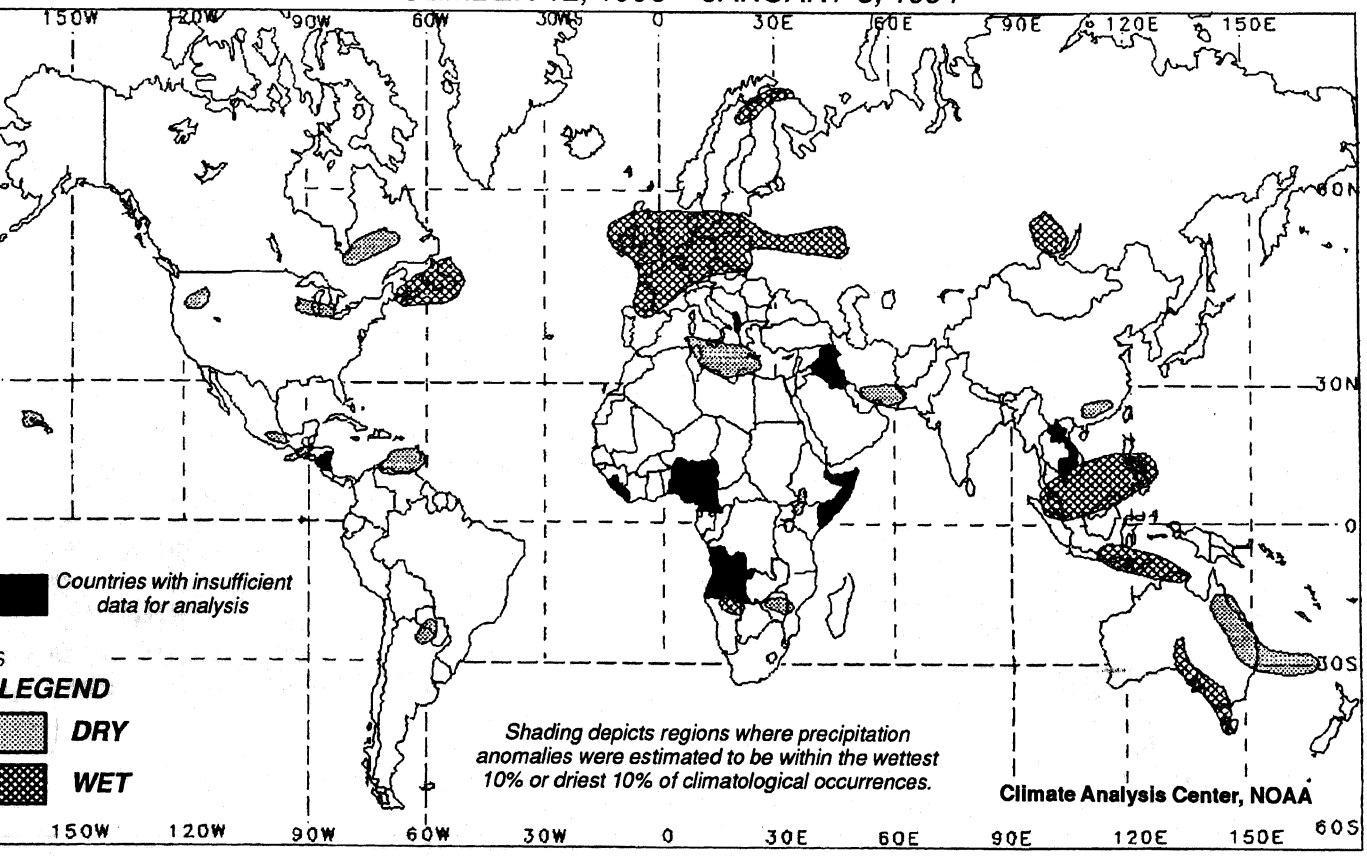
TWO–WEEK GLOBAL TEMPERATURE ANOMALIES

DECEMBER 26, 1993 – JANUARY 8, 1994



FOUR–WEEK GLOBAL PRECIPITATION ANOMALIES

DECEMBER 12, 1993 – JANUARY 8, 1994



UNITED STATES MONTHLY CLIMATE SUMMARY

DECEMBER 1993

During the first few days of December, the second storm system in a week delivered locally heavy rain to much of the eastern half of the country, with freezing rain in parts of the upper and middle Mississippi Valley. Subsequently, the first full week of the month featured strong Pacific Ocean storms moving into the Far West, bringing over nine inches of rain to the northern California coast, with ***unofficial*** reports of up to 20 inches at isolated locations in northwestern portions of the state, while heavy snows blanketed the Cascades and Sierra Nevadas. Winds reached 90 mph at Stead, NV (near Reno) while sustained winds of 75 mph and gusts to 98 mph raked the northern Oregon Coast. In addition, abundant rains on some fire–scarred areas of southern California caused small mudslides.

During the second week of the month, moderate to heavy snow blanketed areas from the central Rockies eastward to the middle Mississippi Valley as the Pacific storms moved eastward. Parts of Utah were buried under two feet of heavy, wet snow. Later in the week, the storm generated up to four inches of precipitation, heavy surf, coastal flooding, and beach erosion as it moved northeastward through the nation's midsection and off the middle and northern Atlantic Coast. Meanwhile, another system brought more heavy precipitation to much of the central United States from the central Rockies northeastward to the northern Plains and upper Mississippi Valley and southward to the Texas Gulf Coast. Farther west, temperatures soared into the sixties in the western portions of Washington and Oregon, establishing extreme high records for December in Salem, Portland, and Seattle–Tacoma (page 10).

A shift in the upper air flow brought a series of fronts through the eastern half of the nation during the third week of December while dry and mild conditions prevailed in the West. The first system generated heavy surf along the northern Atlantic Coast and dumped up to eight inches of snow from Pennsylvania and New Jersey northeastward to northern Maine. The second system then swept southeastward out of Canada, spawning thunderstorms across much of the Southeast and battering the Northeast and Appalachians with heavy snow and high winds. Three feet of snow piled up in portions of upstate New York, and over two feet buried the higher elevations of western North Carolina. Subsequent frontal systems spread moderate to heavy snow across the Ohio and middle and northern Mississippi Valleys. As the week ended, yet another system produced light snow over the Appalachians, mid–Atlantic, and Northeast on Christmas Day.

The final week of December was characterized by the sharp contrast of bitterly cold Arctic air across the East with mild Pacific air throughout Alaska and the West. Snow and ice hampered holiday travelers in the Great Lakes region while bitterly cold weather resulted in numerous stalled cars across the northern tier of states. Arctic air plunging southward across the relatively warm Great Lakes generated lake–effect snow squalls that buried the shores of Lakes Erie and Ontario under 20 to 36 inches of snow. Meanwhile, several inches of snow and/or ice covered parts of the interior Southeast, mid–Atlantic, and New England in association with a weak upper level disturbance. After a relatively dry week, heavy precipitation again soaked much of the Pacific Coast from northern California to southwestern British Columbia, with over four inches of precipitation inundating northwestern Oregon.

According to the River Forecast Centers, over four inches of precipitation drenched much of the South, the Appalachians, and the middle and northern Atlantic Seaboard, with totals of eight to fourteen inches falling on portions of the southern Appalachians and the southwestern Ozarks (page 6). In addition, more than four inches soaked the Pacific Northwest Coast, and four to ten inches of precipitation fell on the Panhandle and along the southern coast of Alaska. Based on preliminary calculations from the National Climatic Data Center (NCDC), only the Northeast Region reported above median precipitation, and only 16 of the 48 contiguous states measured above median December totals (page 7). In Alaska, above normal precipitation prevailed in the Panhandle, along the southern coast, and across west–central portions of the state.

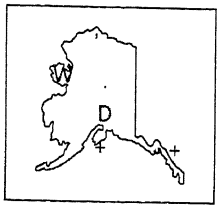
Most of the West, the Great Lakes and Corn Belt, the South, and the Southeast reported below normal precipitation, with large areas of the West, the Corn Belt, and the western Great Lakes receiving less than half the normal December amount (page 6). The driest December on record was observed in LaCrosse, WI and in Alpena, MI (page 10). Eight of the nine NCDC regions received submedian precipitation, with the Southwest experiencing the 8th driest December in 99 years (page 7). Of the 48 contiguous states, 32 observed below median monthly totals, with one state (Nevada) ranking 5th driest and two (Louisiana and Wyoming) experiencing the 6th driest such month since records began in 1895. Across the nation as a whole, the extensive areas of below normal precipitation helped yield the 12th driest December in 99 years of record. In addition, most of the Hawaiian Islands and the interior and northern sections of Alaska were drier than normal, with monthly totals below two inches at most locations. Across the Pacific Northwest, below normal precipitation during the first three months of the water year (October – December) was reported for the eighth time in the last nine years, even though December's precipitation was generally near normal this year (page 10).

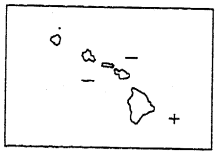
Unseasonably mild weather dominated most of the country from the Far West eastward to the Appalachians, with temperatures averaging 6°F to 11°F above normal across the northern Rockies and the northern and central Great Plains (page 8). In addition, above normal temperatures prevailed across New England and eastern sections of New York and Pennsylvania. Eight of the nine NCDC regions reported above median monthly mean temperatures, with the West–North Central Region experiencing the 15th warmest December since records began in 1895 (page 9). Above normal temperatures covered 30 of the 48 contiguous states, with Montana observing the 9th warmest such month in the 99–year historical distribution. In addition, temperatures averaged as much as 16°F above normal across Alaska while slightly warmer than normal conditions were reported across Hawaii.

In sharp contrast, submedian temperatures were scattered across the Southwest, and covered most of the eastern Great Lakes, the Appalachians, and the Southeast, with departures reaching –6°F in northern Florida (page 8). Among the nine NCDC regions, only the Southeast reported below median temperatures (page 9). Only 18 of the 48 contiguous states endured submedian December mean temperatures, but no states experienced one of the ten coldest Decembers in 99 years of record.

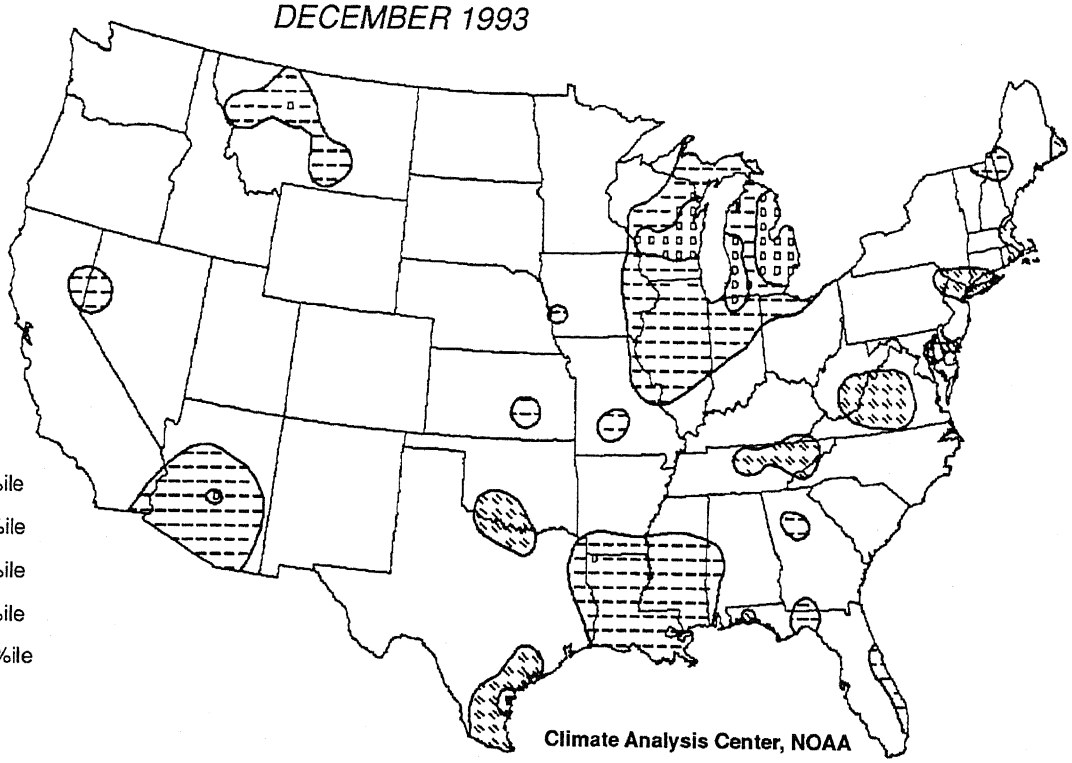
PRECIPITATION PERCENTILES

DECEMBER 1993





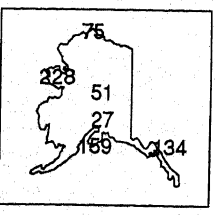
D less than 10%ile
– 10%ile to 30%ile
. 30%ile to 70%ile
\+ 70%ile to 90%ile
W more than 90%ile

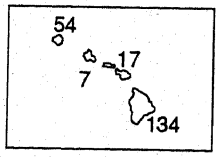


DECEMBER 1993 PRECIPITATION PERCENTILES, as computed by the Climate Analysis Center. *A relatively dry month (<30%ile) was observed across much of the Great Lakes, the lower Mississippi Valley and scattered portions of the Southeast, most of Arizona, and parts of Montana and western Nevada. Totals were among the driest 10% of the historical (1961 – 1990) distribution in parts of Wisconsin and Michigan. Climatologically significant wetness (>70%ile) was limited to scattered areas across the Appalachians and the southern Plains.*

PERCENT OF NORMAL PRECIPITATION

DECEMBER 1993

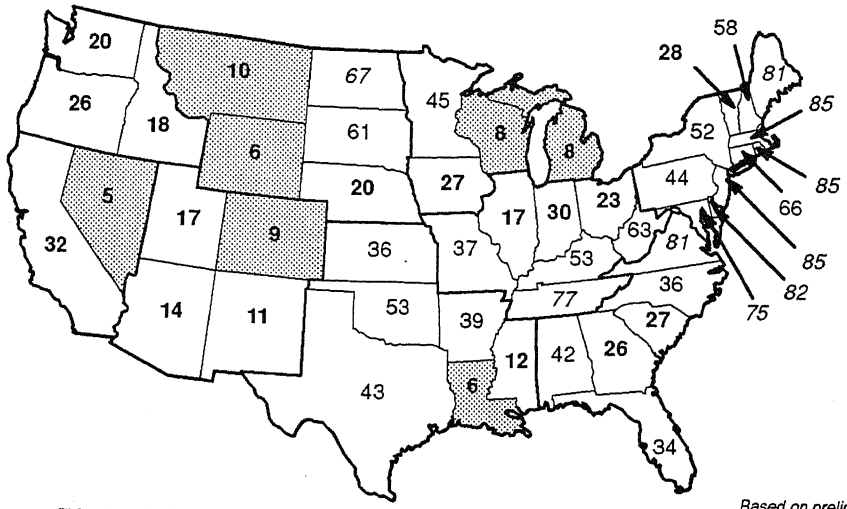




ECEMBER 1993 PERCENT OF NORMAL PRECIPITATION. Hatched areas received above normal precipitation, and dotted areas reported under alf of normal. *Above normal precipitation fell on most of the Great Plains, the mid-Atlantic, and the Northeast. In contrast, abnormally dry weather prevailed ross most of the West, the Corn Belt and Great Lakes, the lower Mississippi Valley, and the Southeast.*

HISTORICAL PRECIPITATION RANKINGS BY STATE

DECEMBER 1993



LEGEND

Among the ten driest

Among the ten wettest

1 – 33: DRY

34 – 66: NEAR NORMAL

67 – 99: WET

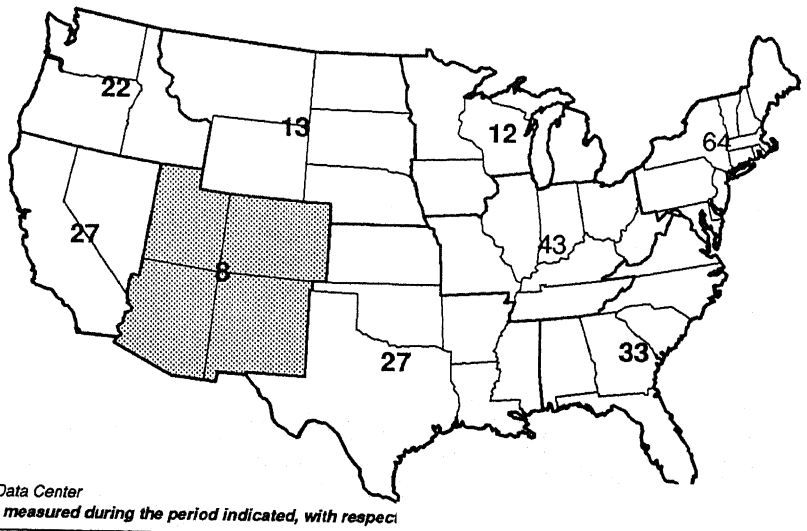
Climate Analysis Center, NOAA

Based on preliminary data generated by the National Climatic Data Center

This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

HISTORICAL PRECIPITATION RANKINGS BY REGION AND NATION

DECEMBER 1993



LEGEND

Among the ten driest

Among the ten wettest

1 – 33: DRY

34 – 66: NEAR NORMAL

67 – 99: WET

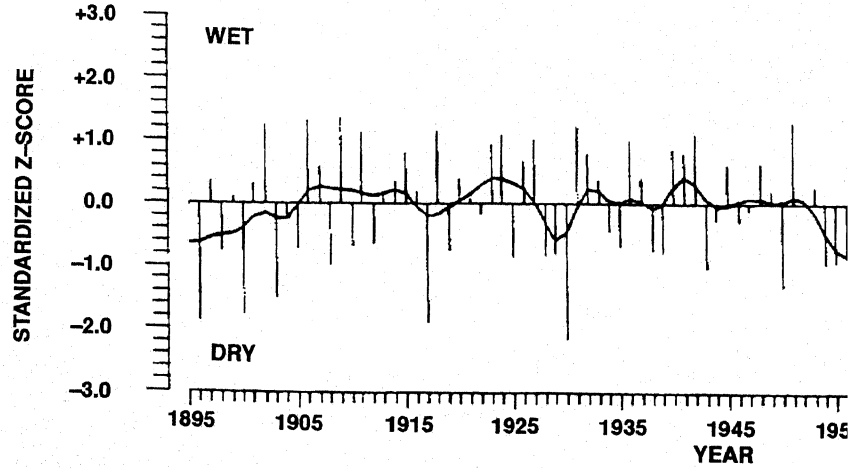
Climate Analysis Center, NOAA

Based on preliminary data generated by the National Climatic Data Center

This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect

U. S. NATIONAL NORMALIZED PREC

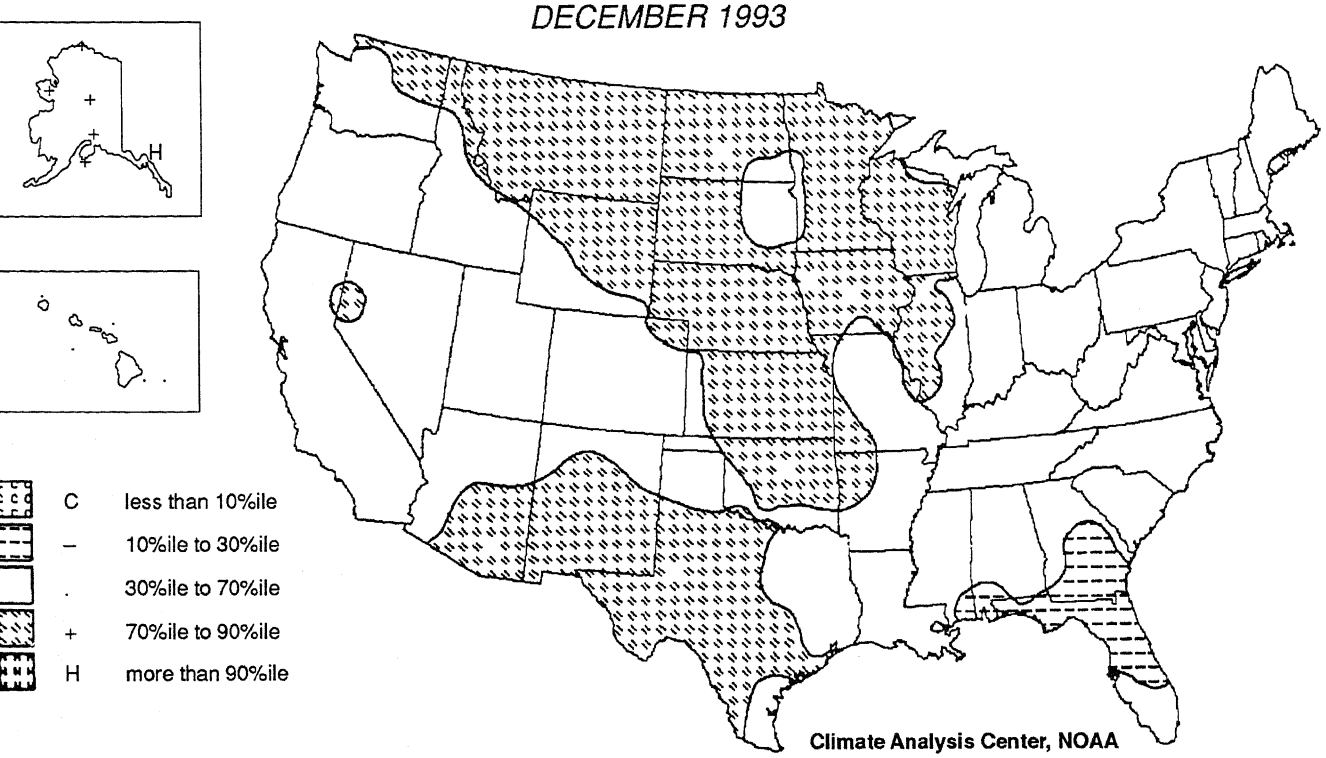
DECEMBER 1895 – 199



NATIONAL MEAN DECEMBER 1895–1993 PRECIPITATION INDEX, as computed by the
the 12th driest such month on record. This index takes local normals into account so that regions wit
value.

TEMPERATURE PERCENTILES

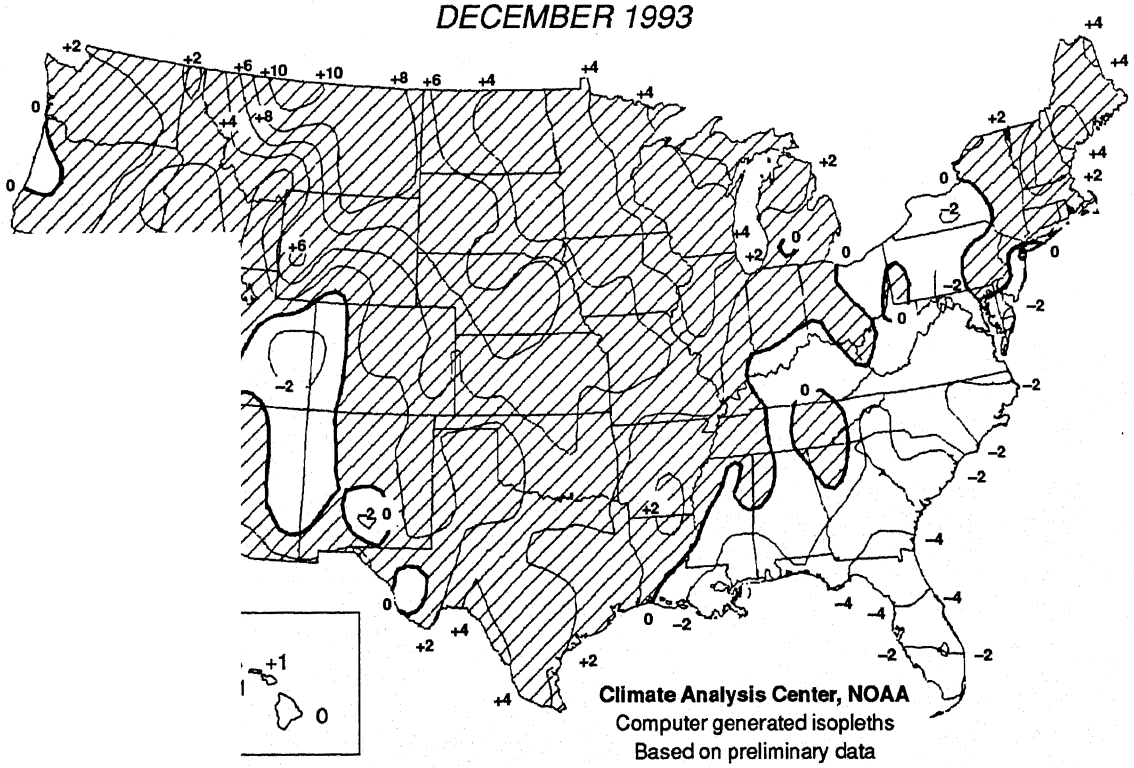
DECEMBER 1993



DECEMBER 1993 TEMPERATURE PERCENTILES, as computed by the Climate Analysis Center. *Unusually mild weather (>70%ile) prevailed across most of the Plains, the northern and southern Rockies, and the Southwest. Abnormally cold conditions (<30%ile) were limited to the central Gulf Coast, southern Georgia, and northern Florida.*

DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

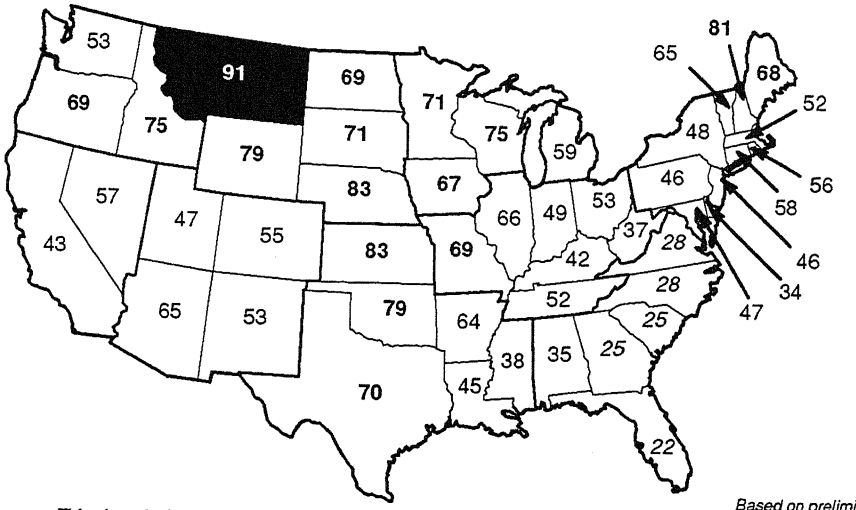
DECEMBER 1993



AVERAGE TEMPERATURE FROM NORMAL (°F). Shaded areas experienced above normal temperatures. *most of the nation from the Far West eastward to the Appalachians and across New England, with departures of +6°F to and northern High Plains. In sharp contrast, subnormal temperatures were recorded along the eastern Great Lakes, in ss much of the mid-Atlantic and the Southeast, where readings averaged as much as 4°F below normal.*

HISTORICAL TEMPERATURE RANKINGS BY STATE

DECEMBER 1993



LEGEND

Among the ten coldest

Among the ten warmest

1 – 33: COLD

34 – 66: NEAR NORMAL

67 – 99: WARM

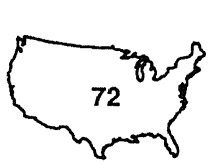
Climate Analysis Center, NOAA

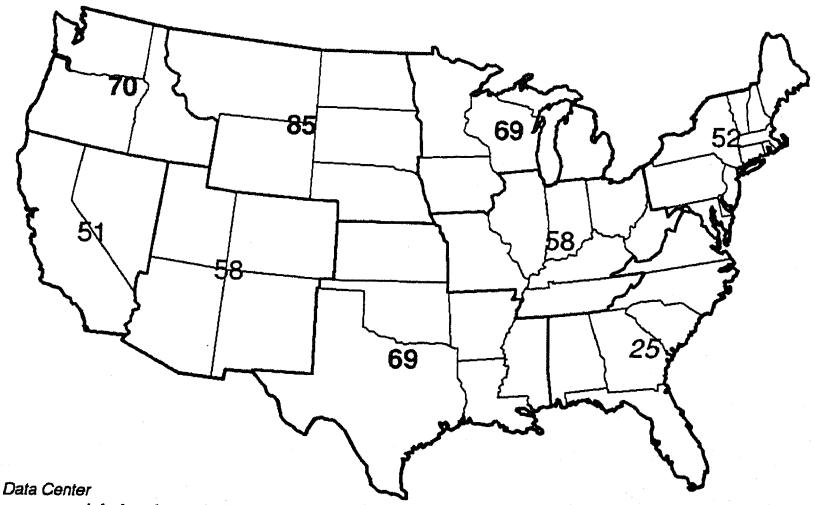
Based on preliminary data generated by the National Climatic Data Center

This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

HISTORICAL TEMPERATURE RANKINGS BY REGION AND NATION

DECEMBER 1993





LEGEND

Among the ten coldest

Among the ten warmest

1 – 33: COLD

34 – 66: NEAR NORMAL

67 – 99: WARM

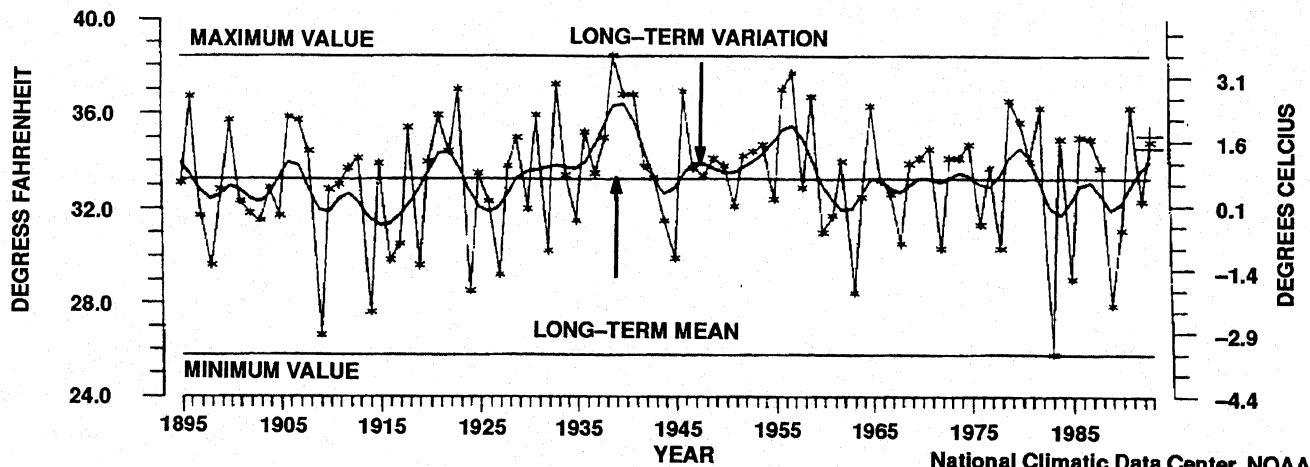
Climate Analysis Center, NOAA

Based on preliminary data generated by the National Climatic Data Center

This chart depicts the ranking of the specific parameter, as measured during the period indicated, with respect to all other such periods on record since 1895.

U. S. NATIONAL TEMPERATURE

DECEMBER 1895 – 1993



National Climatic Data Center, NOAA

NATIONALLY AVERAGED DECEMBER 1895–1993 TEMPERATURES, as computed by the National Climatic Data Center. *December 1993 was the 28th warmest such month on record, with the index dominated by extensive areas of above median temperatures across most of the areas to the north and west of the Ohio and Mississippi Rivers.*

TABLE 1. RECORD DECEMBER PRECIPITATION

STATION	TOTAL (IN)	NORMAL (IN)	PCT. OF NORMAL	RECORD TYPE	RECORDS BEGAN
LACROSSE, WI	T	1.27	0.0	LOWEST	1951
ALPENA, MI	0.41	2.03	20.2	LOWEST	1873

NOTE: Trace precipitation is considered ZERO precipitation. Stations with no precipitation are only included if normal precipitation is 0.25 inches or more.
****** – Percent of normal not calculable.*

TABLE 2. RECORD DECEMBER AVERAGE TEMPERATURES

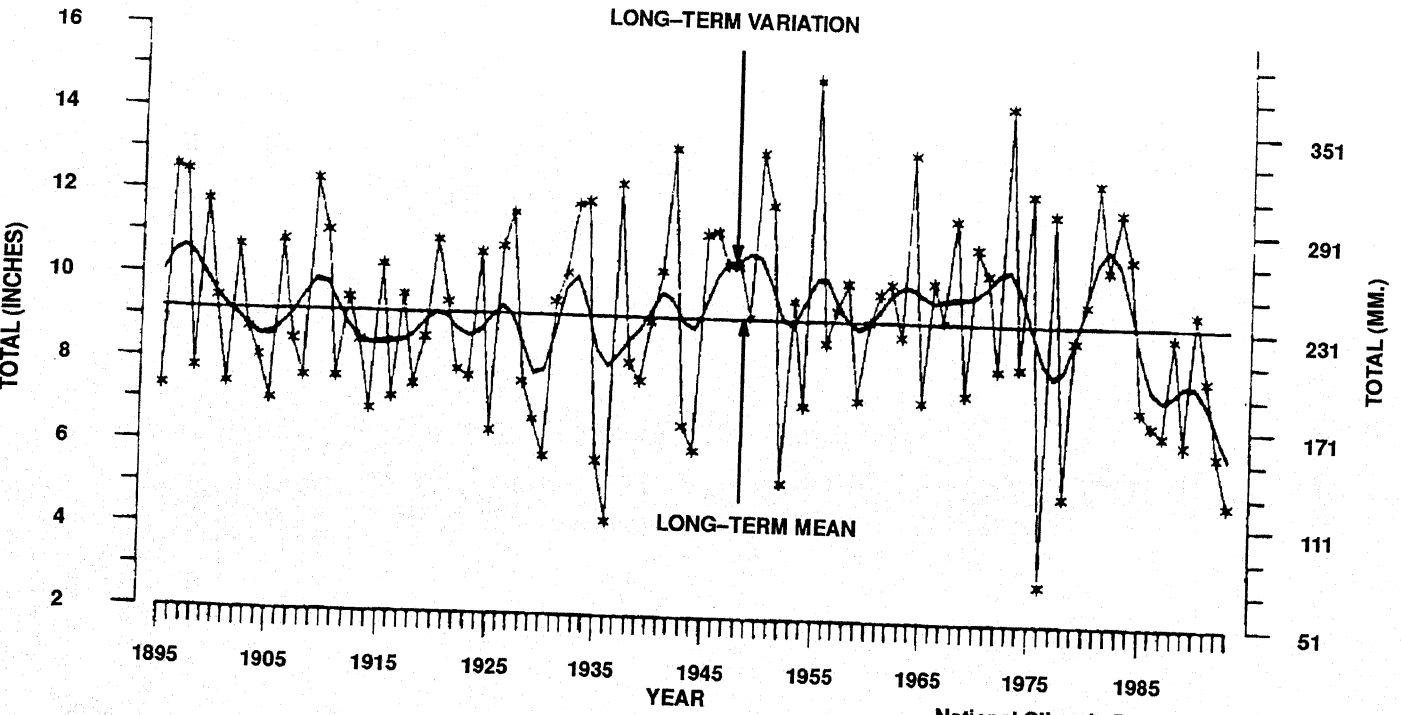
STATION	DEPARTURE (°F)	AVERAGE (°F)	NORMAL (°F)	RECORD TYPE	RECORDS BEGAN
ANNETTE ISLAND, AK	+5.6	41.4	35.8	HIGHEST	1941

TABLE 3. RECORD DECEMBER EXTREME TEMPERATURES

STATION	EXTREME (°F)	DATE OCCURRED	RECORD TYPE	RECORDS BEGAN
SALEM, OR	68	DECEMBER 10	HIGHEST	1938
PORTLAND, OR	65	DECEMBER 10	HIGHEST	1941
SEATTLE–TACOMA, WA	64	DECEMBER 10	HIGHEST	1945
SAULT SAINTE MARIE, MI	–31	DECEMBER 26	LOWEST	1941

PACIFIC NORTHWEST BASIN PRECIPITATION

OCTOBER – DECEMBER, 1895 – 1993



PACIFIC NORTHWEST BASIN PRECIPITATION FOR OCTOBER–DECEMBER, 1895–1993, as computed by the National Climatic Data Center. *Subnormal precipitation fell in the Pacific Northwest Basin during October – December 1993. A slow start to the wet season has been observed in eight of the last nine years, with 1993 bringing the third driest such period on record (since 1895).*

EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC ADVISORY 94/1

issued by

CLIMATE ANALYSIS CENTER/NMC
January 10, 1994

The warm episode conditions that have persisted in the tropical Pacific during the last three years showed signs of weakening during December. The Southern Oscillation Index was near zero for the second consecutive month, and the equatorial easterlies in the central Pacific strengthened to near–normal intensity. The latter resulted in a downward trend in the equatorial SST anomalies, especially near 150W. However, sea surface temperature (SST) anomalies remained positive throughout most of the central and eastern tropical Pacific. Positive anomalies greater than +1°C were observed along the equator near the date line and in sections both north and south of the equator in the eastern Pacific.

Atmospheric convection during December was enhanced in the western tropical Pacific and along the Intertropical Convergence Zone (ITCZ) in the North Pacific. During the last two months the area of enhanced convection has shifted westward from 170°E to 160°E, as near–normal convection developed over Indonesia and along the equator near the date line.

Subsurface temperatures throughout the equatorial Pacific were near normal during December, and the depth of the oceanic thermocline along the equator was near–normal. The thermocline depths have shown very little variability since the beginning of October, indicating an absence of significant oceanic Kelvin wave activity.

Statistical and numerical model forecasts indicate near or slightly warmer than normal sea surface temperatures in the central and eastern tropical Pacific during the first three months of 1994 followed by near normal or slightly cooler than normal SSTs through mid–1994. These forecasts, along with indications in some tropical indices, favor a continued fading out of the 1991–1993 warm episode. The strengthening of the equatorial easterlies in the central Pacific and the absence of significant Kelvin wave activity indicate that significant anomalous warming is not likely to develop along the west coast of South America during 1994. However, the continued presence of a large area of positive SST anomalies in the tropical central and eastern Pacific indicates that weak warm episode conditions may continue during early 1994. These conditions may manifest themselves as an enhancement in convection along the equator in the central Pacific and in the region of the ITCZ north of the equator in the eastern Pacific.

Future advisories will be issued when a significant trend toward warm episode conditions is evident or appears imminent.

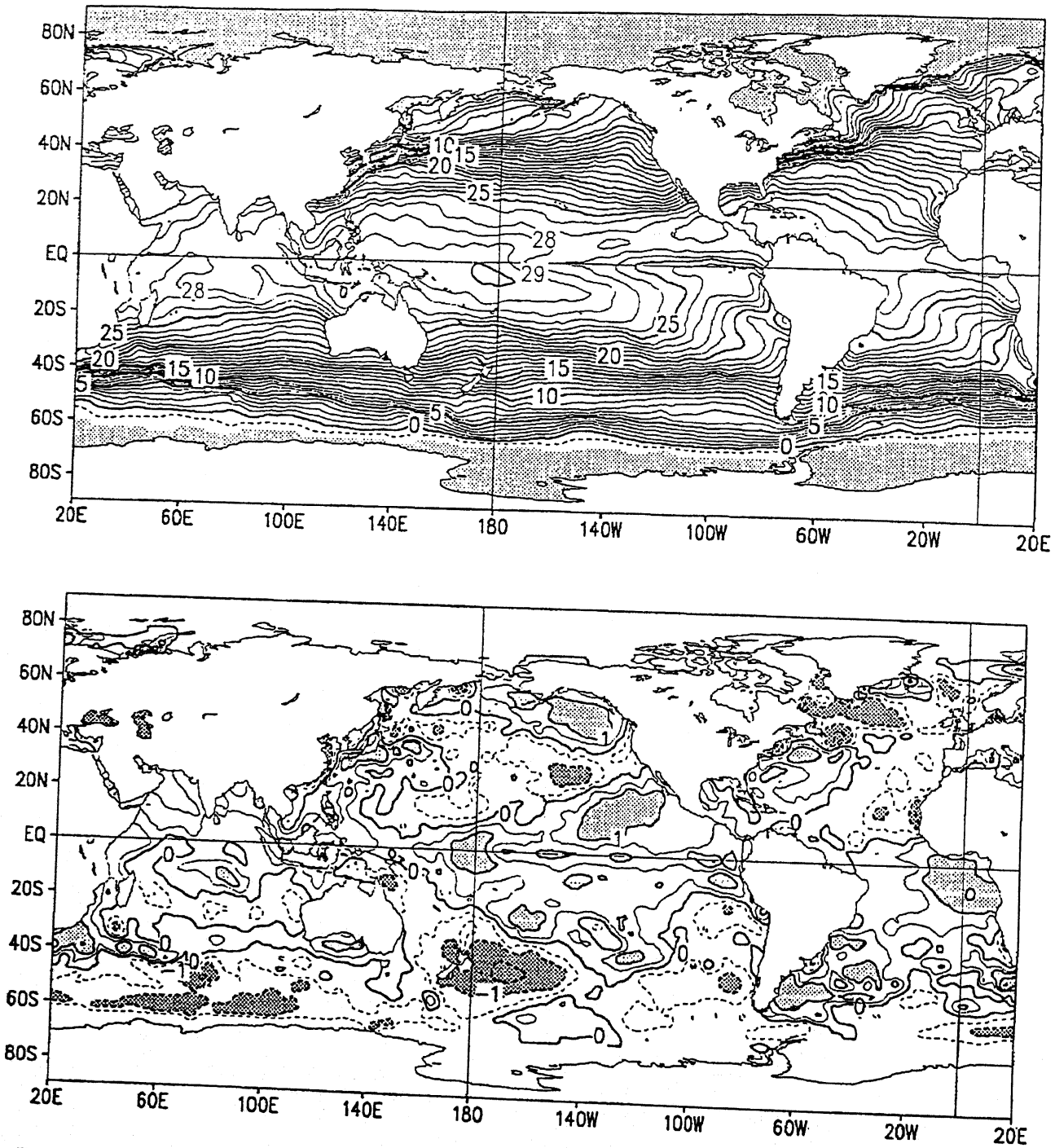


FIGURE 1. *Sea surface temperature, mean (top – blended analysis) and anomalous (bottom), for December 1993. Mean SST contour interval is 1°C. Heavy contours are at 0°C and multiples of 5°C. The stippling in the mean field indicates sea ice cover. Cross-hatching (stippling) in bottom figure indicates anomalies less (greater) than –1°C (+1°C). Additional anomaly contours of ±0.5°C are shown. Anomalies are computed as departures from the COADS/ICE climatology (Reynolds 1988,* J. Climate, *1, 75–86). Anomaly contour interval is 1°C and negative contours are dashed.*

ATMOSPHERIC AND OCEANIC INDICIES

DATE	SLP ANOMALIES		TAHITI–DARWIN SOI	PACIFIC 850 MB ZONAL WIND INDICES			PACIFIC 200 MB ZONAL WIND INDEX	OLR INDEX	PACIFIC SST					
	TAHITI	DARWIN		5N–5S 135E–180	5N–5S 175W–140W	5N–5S 135W–120W	5N–5S 165W–110W	5N–5S 160E–160W	NINO 1+2 0–10S 90W–80W		NINO 3 5N–5S 150W–90W		NINO 4 5N–5S 160E–150W	
DEC 93	–0.2*	–0.3	0.0*	–0.7	0.0	–0.6	0.1	–0.5	0.6	23.2	0.3	25.4	0.7	28.9
NOV 93	0.0	0.3	–0.2	0.1	–0.7	–1.0	–0.9	0.3	0.1	21.6	0.3	25.2	0.8	29.1
OCT 93	–1.0	1.4	–1.5	–0.9	–0.9	–1.1	0.3	–1.4	0.8	21.6	0.4	25.2	0.6	28.9
SEP 93	0.2	1.5	–0.8	–0.1	–0.7	–1.4	–0.6	–0.8	0.5	21.1	0.3	25.0	0.9	29.1
AUG 93	0.1	2.5	–1.5	–0.9	–0.7	–1.0	–0.1	–0.6	0.4	21.4	0.0	25.1	0.6	28.9
JUL 93	–1.1	0.7	–1.1	0.0	0.0	0.2	0.4	–1.1	0.7	22.3	0.3	25.9	0.8	29.2
JUN 93	–0.6	1.6	–1.4	–0.6	–1.0	–1.4	–1.0	–1.5	0.7	23.5	0.8	27.2	0.6	29.1
MAY 93	0.5	1.5	–0.6	–0.5	–0.9	–1.2	–1.3	–1.8	1.2	25.3	1.7	28.4	0.6	29.1
APR 93	–0.6	2.0	–1.6	–1.7	–1.0	–0.8	–1.0	–2.4	0.8	26.3	1.2	28.5	0.5	28.8
MAR93	0.9	2.7	–1.1	–1.5	–0.4	–0.2	0.0	–0.9	0.7	26.9	0.8	27.6	0.5	28.5
FEB 93	–1.9	0.0	–1.3	–1.4	–1.0	–0.5	–1.2	–1.8	0.6	26.3	0.3	26.6	0.4	28.5
JAN 93	–1.3	0.6	–1.2	0.0	–0.9	–1.0	–1.1	–0.7	0.1	24.4	0.1	25.5	0.5	28.6

* PRELIMINARY

** REVISED

TABLE T1 – *Atmospheric and SST index values for the most recent 12 months. Atmospheric indices are standardized by the mean annual standard deviation except for the Tahiti and Darwin SLP anomalies which are in mb. SST indices (anomalies and means) are in degrees Celsius. Note that positive (negative) values of the 200 mb Zonal Wind Index imply westerly (easterly) anomalies; positive (negative) values of the 850 mb Zonal Wind Indices imply easterly (westerly) anomalies.*